

We claim:

1. A system for controlling the supply of power from an external power source to rechargeable batteries in an apparatus which can be powered either by the external power source or the rechargeable batteries, comprising:

- a first detector for detecting a difference between a maximum permissible charging current allowed by the rechargeable batteries and a charging current flowing to the rechargeable batteries;
- a second detector for detecting a maximum useable current by detecting a difference between a maximum supplyable current allowed by the external power source and the current being consumed by the apparatus;
- a third detector for detecting a difference between the maximum useable current and the charging current flowing to the rechargeable batteries; and
- a controller for controlling power supplied from the external power source to the rechargeable batteries in accordance with the differences detected by the first and third detectors so that the charging current flowing to the rechargeable batteries does not exceed the maximum permissible charging current and does not exceed the maximum useable current.

2. A system for controlling as set forth in claim 1, further comprising a fourth detector for detecting a difference between a maximum permissible supply voltage allowed by said rechargeable batteries and a voltage applied to said rechargeable batteries, said control means controlling the power supplied from the external power source to the rechargeable batteries in accordance with the difference detected by the fourth detector so that the voltage applied to the rechargeable batteries does not exceed the maximum permissible supply voltage.

3. A system for controlling the supply of power from an external power source to rechargeable batteries in an apparatus which can be powered by either the external power source or the rechargeable batteries, comprising:

- a first detector for detecting a difference between a maximum permissible charging current allowed by the rechargeable batteries and a charging current flowing to the rechargeable batteries;
- a second detector for detecting a difference between a lowest permissible output voltage allowed by the external power source and an output voltage which is being output by the external power source; and
- a controller for controlling power supplied from the external power source to the rechargeable batteries in accordance with the differences detected by the first and second detectors so that the charging current flowing to the rechargeable batteries does not exceed the maximum permissible charging current and the output voltage being output by the external power source is not less than the lowest permissible output voltage.

4. A control system for controlling as set forth in claim 3, further comprising a third detector for detecting a difference between the maximum permissible supply voltage allowed by the rechargeable batteries and a voltage applied to said rechargeable batteries, said control means controlling the

power supplied from the external power source to the rechargeable batteries in accordance with the difference detected by the third detector so that the voltage applied to the rechargeable batteries does not exceed the maximum permissible supply voltage.

5. A system for controlling as set forth in claim 1,

wherein said controller controls the power supplied from the external power source to the rechargeable batteries by determining if either the first or third detector detects a negative difference thus indicating that the charging current exceeds a maximum,

wherein if either of the first or third detector detects a negative difference, the controller selects the largest negative difference and controls the charging current to increase the largest negative difference to a zero difference, and

wherein if neither of the first or third detector detects a negative difference, the controller selects the largest positive difference and controls the charging current to decrease the largest positive difference to a zero difference.

6. A system for controlling as set forth in claim 2,

wherein said controller controls the power supplied from the external power source to the rechargeable batteries by determining if any of the first, third or fourth detector detects a negative difference thus indicating that the charging current or the supply voltage exceeds a maximum,

wherein if any of the first, third or fourth detector detects a negative difference, the controller selects the largest negative difference and controls the charging current to increase the largest negative difference to a zero difference, and

wherein if none of the first, third or fourth detector detects a negative difference, the controller selects the largest positive difference and controls the charging current to decrease the largest positive difference to a zero difference.

7. A system for controlling as set forth in claim 3,

wherein said controller controls the power supplied from the external power source to the rechargeable batteries by determining if either of the detector detects a negative difference thus indicating that the charging current exceeds a maximum or the output voltage is less than a minimum,

wherein if either of the detector detects a negative difference, the controller selects the largest negative difference and controls the charging current to increase the largest negative difference to a zero difference, and

wherein if neither of the detector detects a negative difference, the controller selects the largest positive difference and controls the charging current to decrease the largest positive difference to a zero difference.

8. A system for controlling as set forth in claim 4,

wherein said controller controls the power supplied from the external power source to the rechargeable batteries by determining if any of the detector detects a negative difference thus indicating that a current or a voltage is greater than a maximum or less than a minimum,

wherein if any of the detector detects a negative difference, the controller selects the largest negative difference and controls the charging current to increase the largest negative difference to a zero difference, and

wherein if none of the detector detects a negative difference, the controller selects the largest positive

difference and controls the charging current to decrease the largest positive difference to a zero difference.

9. A system for controlling the supply of power from a charger circuit to rechargeable batteries, the rechargeable batteries being used to supply power to a power supply circuit, comprising:

- a sense resistor having two ends, located between the rechargeable batteries and a connection point for the charger circuit and the power supply circuit, the sense resistor detecting current flowing into and out of the rechargeable batteries;
- a current measurement device having two inputs connected respectively to the two ends of the sense resistor, the current measurement device determining which of the two inputs has a larger voltage and generating a voltage in accordance with the difference between the voltages of the two inputs to thereby measure the current flowing into or out of the rechargeable battery; and
- a control circuit regulating to a constant current the current flowing into the rechargeable batteries, based on the current flowing into the rechargeable batteries detected by the sense resistor.

10. A system for controlling as set forth in claim 9, wherein the control circuit has two inputs connected respectively to the two ends of the sense resistor.

11. (NEW) An electronic apparatus connected to an AC adapter, capable of charging a battery by using power from the AC adapter as an input while making a load operate by using the DC power supplied from the AC adapter, the electronic apparatus comprising:

- a connector connected to the AC adapter, for receiving DC power from the AC adapter;
- a charger for supplying charging power to the battery by using the power from the connector as an input; and
- a charge control circuit for controlling the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery becomes a value assigned in advance, wherein the power given to the load from the AC adapter through the connector changes depending on the state of the load.

12. (NEW) An electronic apparatus as set forth in claim 11, further comprising a charging current detector for detecting a charging current supplied to the battery, wherein the charge control circuit controls the charging current so that the charging current becomes equal to or lower than the value assigned to the battery, based on a value of the charging current to the battery detected by the charging current detector.

13. (NEW) An electronic apparatus as set forth in claim 11, further comprising a charging voltage detector for detecting a charging voltage supplied to the battery, wherein the control circuit controls the charging voltage so that the charging voltage becomes equal to or lower than the value assigned to the battery, based on a value of the charging voltage to the battery detected by the charging voltage detector.

14. (NEW) An electronic apparatus as set forth in claim 11, wherein the pre-assigned value is a maximum permissible supply power of the AC adapter.

15. (NEW) An electronic apparatus as set forth in claim 11, wherein the charge control circuit controls the charging power the charger supplies to the battery, based on sensed information on the input from the connector, so that a sum of the power applied to the load and the power charged to the battery becomes the pre-assigned value.

16. (NEW) A charging apparatus for charging a battery for an electronic apparatus that is connected to an AC adapter and that is capable of charging the battery by using power from the AC adapter as an input while making a load operate by using DC power supplied from the AC adapter, the charging apparatus comprising:

a charger for supplying charging power to the battery by using as an input the power from a connector that is connected to the AC adapter to receive the DC power from the AC adapter; and

a charge control circuit for controlling the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery becomes a value assigned in advance, wherein the power given to the load from the AC adapter through the connector changes depending on the state of the load.

17. (NEW) A charging apparatus as set forth in claim 16, wherein the charge control circuit controls the charging current so that the charging current becomes equal to or lower than the value assigned to the battery, based on a detected value of the charging current to the battery.

18. (NEW) A charging apparatus as set forth in claim 16, wherein the charge control circuit controls the charging voltage so that the charging voltage becomes equal to or lower than the value assigned to the battery, based on a detected value of the charging voltage to the battery.

19. (NEW) A charging apparatus as set forth in claim 16, wherein the pre-assigned value is a maximum permissible supply power of the AC adapter.

20. (NEW) A charging apparatus as set forth in claim 16, wherein the charge control circuit controls the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery becomes the pre-assigned value, based on sensed information on the input from the connector.

21. (NEW) A charge control circuit for controlling a charger in an electronic apparatus having a connector connected to an AC adapter to receive DC power from the AC adapter, and a charger for supplying charging power to a battery by using the power from the connector as an input, and making a load operate by using the DC power supplied from the AC adapter, the charge control circuit comprising:

a control circuit for controlling the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery becomes a value assigned in advance, wherein the power given to the load from the AC adapter through the connector changes depending on the state of the load.

22. (NEW) A charge control circuit as set forth in claim 21, wherein the control circuit controls the charging current based on a detected value of the charging current to the battery so that the charging current becomes equal to or lower than the value assigned to the battery.

23. (NEW) A charge control circuit as set forth in claim 21, wherein the control circuit controls the charging voltage based on a detected value of the charging voltage to the battery so that the charging voltage becomes equal to or lower than the value assigned to the battery.

24. (NEW) A charge control circuit as set forth in claim 21, wherein the pre-assigned value is a maximum permissible supply power of the AC adapter.

25. (NEW) A charge control circuit as set forth in claim 21, wherein the control circuit controls the charging power the charger supplies to the battery, based on sensed information on the input from the connector, so that a sum of the power applied to the load and the power charged to the battery becomes the pre-assigned value.

26. (NEW) An electronic apparatus capable of charging a battery by using power from a power source as an input while making a load operate by using the power supplied from the power source, the electronic apparatus comprising:  
a charger for supplying charging power to the battery by using the power from the power source as an input;  
a detector for detecting the power applied to the load;  
a charging current detector for detecting a charging current to the battery; and  
a control circuit for controlling the charger to generate the charging power so that a sum of the charging power supplied to the battery and the power applied to the load that has been detected becomes a value assigned in advance, and for controlling the charging current based on the detected charging current so that the charging current to the battery becomes equal to or lower than the charging current assigned in advance to the battery.

27. (NEW) An electronic apparatus capable of charging a battery by using power from a power source as an input while making a load operate by using the power supplied from the power source, the electronic apparatus comprising:  
a charger for supplying charging power to the battery by using the power from the power source as an input;  
a detector for detecting the power applied to the load;  
a charging voltage detector for detecting a charging voltage to the battery; and  
a control circuit for controlling the charger to generate the charging power so that a sum of the charging power supplied to the battery and the power applied to the load that has been detected becomes a value assigned in advance, and for controlling the charging voltage based on the detected charging voltage so that the charging voltage becomes within a voltage value assigned in advance to the battery.

28. (NEW) An electronic apparatus capable of charging a battery by using, as an input, power from a power source having a prescribed maximum permissible supply power while making a load operate by using the power supplied from the power source, the electronic apparatus comprising:

a charger for supplying charging power to the battery by using the power from the power source as an input;

a detector for detecting the power applied to the load;  
and

a control circuit for controlling the charger to adjust the charger to supply the charging power which is the maximum permissible supply power minus the above detected power applied to the load.

29. (NEW) A charging apparatus for an electronic apparatus capable of charging a battery by using power from a power source as an input while making a load operate by using the power supplied from the power source, the charging apparatus comprising:

a charger for supplying charging power to the battery by using the power from the power source as an input; and

a control circuit for controlling the charger to generate the charging power so that a sum of the charging power supplied to the battery and the power applied to the load detected by a detector for detecting the power applied to the load becomes a value assigned in advance, and for controlling the charging current, based on a charging current value detected by a charging current detector for detecting the charging current to the battery, so that the charging current to the battery becomes equal to or lower than the charging current assigned in advance to the battery.

30. (NEW) A charging apparatus for an electronic apparatus capable of charging a battery by using power from a power source as an input while making a load operate by using the power supplied from the power source, the charging apparatus comprising:

a charger for supplying charging power to the battery by using the power from the power source as an input;

and a control circuit for controlling the charger to generate the charging power so that a sum of the charging power supplied to the battery and the power applied to the load detected by a detector for detecting the power applied to the load becomes a value assigned in advance, and for controlling the charging voltage, based on a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery, so that the charging voltage becomes within a voltage value assigned in advance to the battery.

31. (NEW) A charging apparatus for an electronic apparatus capable of charging a battery by using, as an input, power from a power source having a prescribed maximum permissible supply power while making a load operate by using the power supplied from the power source, the charging apparatus comprising:

a charger for supplying charging power to the battery by using the power from the power source as an input; and

a control circuit for controlling the charger so that the charger supplies the charging power which is the maximum permissible supply power minus the power applied to the load that has been detected by a detector for detecting the power applied to the load.

32. (NEW) A charge control circuit for controlling a charger for an electronic apparatus that makes a load operate by using power supplied from a power source and that has the charger for supplying charging power to a battery by

using the power from the power source as an input, the charge control circuit comprising:

a control circuit for controlling the charger to generate the charging power so that a sum of the charging power supplied to the battery and the power applied to the load detected by a detector for detecting the power applied to the load becomes a value assigned in advance, and for controlling the charging current, based on a charging current detected by a charging current detector for detecting the charging current to the battery, so that the charging current supplied to the battery becomes equal to or lower than the charging current assigned in advance to the battery.

33. (NEW) A charge control circuit for controlling a charger for an electronic apparatus that makes a load operate by using power supplied from a power source and that has the charger for supplying charging power to a battery by using the power from the power source as an input, the charge control circuit comprising:

a control circuit for controlling the charger to generate the charging power so that a sum of the charging power supplied to the battery and the power applied to the load detected by a detector for detecting the power applied to the load becomes a value assigned in advance, and for controlling the charging voltage, based on a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery, so that the charging voltage becomes within a voltage value assigned in advance to the battery.

34. (NEW) A charge control circuit for controlling a charger for an electronic apparatus that makes a load operate by using power supplied from a power source having a prescribed maximum permissible supply power and that has the charger for supplying charging power to a battery by using the power from the power source as an input, the charge control circuit comprising:

a control circuit for controlling the charger so that the charger supplies the power which is the maximum permissible supply power minus the power applied to the load detected by a detector for detecting the power applied to the load.

35. (NEW) An electronic apparatus capable of charging a battery by using an input voltage supplied from a power source as an input while applying the input voltage to a load, comprising:

a charger for supplying charging power to the battery by using an input voltage from the power source as an input;

a detector for detecting an input voltage from the power source; and

a control circuit for adjusting the charging power the charger supplies to the battery, based on the detected input voltage.

36. (NEW) An electronic apparatus capable of charging a battery by using an input voltage supplied from a power source as an input while applying the input voltage to a load, comprising:

a charger for supplying charging power to the battery by using an input voltage from the power source as an input;

a detector for detecting an input voltage from the power source; and

a control circuit for adjusting the charging power the charger supplies to the battery based on the detected input voltage, wherein the power applied to the load from the power source changes depending on the state of the load.

37. (NEW) An electronic apparatus capable of charging a battery by using an input voltage supplied from a power source as an input while applying the input voltage to a load, comprising:

a charger for supplying charging power to the battery by using an input voltage from the power source as an input;

a detector for detecting an input voltage from the power source; and

a control circuit for controlling the charger to generate a maximum permissible charging power while controlling the detected input voltage not to be lowered to a minimum permissible input voltage or below.

38. (NEW) An electronic apparatus as set forth in claim 35, wherein

the charger has a switch to be turned On and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

39. (NEW) An electronic apparatus as set forth in claim 36, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

40. (NEW) An electronic apparatus as set forth in claim 37, wherein

the charger has a switch to be turned On and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

41. (NEW) An electronic apparatus as set forth in claim 35, further comprising:

a charging current detector for detecting a charging current value of the battery, wherein the control circuit controls the charging current so that the charging current becomes equal to or lower than a current value assigned to the battery.

42. (NEW) An electronic apparatus as set forth in claim 36, further comprising:

a charging current detector for detecting a charging current value of the battery, wherein the control circuit controls the charging current so that the charging current becomes equal to or lower than a current value assigned to the battery.

43. (NEW) An electronic apparatus as set forth in claim 37, further comprising:

a charging current detector for detecting a charging current value of the battery, wherein the control circuit controls the charging current so that the charging current becomes equal to or lower than a current value assigned to the battery.



44. (NEW) An electronic apparatus as set forth in claim 35, further comprising:

a charging voltage detector for detecting a charging voltage of the battery, wherein the control circuit controls the charging voltage so that the charging voltage becomes equal to or lower than a voltage value assigned to the battery.

45. (NEW) An electronic apparatus as set forth in claim 36, further comprising:

a charging voltage detector for detecting a charging voltage of the battery, wherein the control circuit controls the charging voltage so that the charging voltage becomes equal to or lower than a voltage value assigned to the battery.

46. (NEW) An electronic apparatus as set forth in claim 37, further comprising:

a charging voltage detector for detecting a charging voltage of the battery, wherein the control circuit controls the charging voltage so that the charging voltage becomes equal to or lower than a voltage value assigned to the battery.

47. (NEW) An electronic apparatus as set forth in claim 35, wherein the power source is an AC adapter.

48. (NEW) An electronic apparatus as set forth in claim 36, wherein the power source is an AC adapter.

49. (NEW) An electronic apparatus as set forth in claim 37, wherein the power source is an AC adapter.

50. (NEW) An electronic apparatus as set forth in claim 35, wherein the power source is a power source for generating a DC voltage.

51. (NEW) An electronic apparatus as set forth in claim 36, wherein the power source is a power source for generating a DC voltage.

52. (NEW) An electronic apparatus as set forth in claim 37, wherein the power source is a power source for generating a DC voltage.

53. (NEW) A charging apparatus for an electronic apparatus capable of charging a battery by using an input voltage supplied from a power source as an input while applying the input voltage to a load, the charging apparatus comprising:

a charger for supplying charging power to the battery by using an input voltage from the power source as an input; and

a control circuit for adjusting the charging power the charger supplies to the battery, based on an input voltage detected by a detector for detecting the input voltage from the power source.

54. (NEW) A charging apparatus for an electronic apparatus capable of charging a battery by using an input voltage supplied from a power source as an input while applying the input voltage to a load, the charging apparatus comprising:

a charger for supplying charging power to the battery by using an input voltage from the power source as an input; and

a control circuit for adjusting the charging power the charger supplies to the battery, based on an input voltage detected by a detector for detecting the input voltage from the power source, wherein the power applied to the load changes depending on the state of the load.

55. (NEW) A charging apparatus for an electronic apparatus capable of charging a battery by using an input voltage supplied from a power source as an input while applying the input voltage to a load, the charging apparatus comprising:

a charger for supplying charging power to the battery by using an input voltage from the power source as an input; and

a control circuit for controlling the charger to generate a maximum permissible charging power while controlling an input voltage detected by a detector for detecting the input voltage from the power source not to be lowered to a minimum permissible input voltage or below.

56. (NEW) A charging apparatus as set forth in claim 53, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

57. (NEW) A charging apparatus as set forth in claim 54, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

58. (NEW) A charging apparatus as set forth in claim 55, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

59. (NEW) A charging apparatus as set forth in claim 53, wherein

the control circuit controls the charging current so that a charging current detected by a charging current detector for detecting the charging current value of the battery becomes equal to or lower than a current value assigned to the battery.

60. (NEW) A charging apparatus as set forth in claim 54, wherein

the control circuit controls the charging current so that a charging current detected by a charging current detector for detecting the charging current value of the battery becomes equal to or lower than a current value assigned to the battery.

61. (NEW) A charging apparatus as set forth in claim 55, wherein

the control circuit controls the charging current so that a charging current detected by a charging current detector

for detecting the charging current value of the battery becomes equal to or lower than a current value assigned to the battery.

62. (NEW) A charging apparatus as set forth in claim 53, wherein

the control circuit controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes equal to or lower than a voltage value assigned to the battery.

63. (NEW) A charging apparatus as set forth in claim 54, wherein

the control circuit controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes equal to or lower than a voltage value assigned to the battery.

64. (NEW) A charging apparatus as set forth in claim 55, wherein

the control circuit controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes equal to or lower than a voltage value assigned to the battery.

65. (NEW) A charging apparatus as set forth in claim 53, wherein the power source is an AC adapter.

66. (NEW) A charging apparatus as set forth in claim 54, wherein the power source is an AC adapter.

67. (NEW) A charging apparatus as set forth in claim 55, wherein the power source is an AC adapter.

68. (NEW) A charging apparatus as set forth in claim 53, wherein the power source is a power source for generating a DC voltage.

69. (NEW) A charging apparatus as set forth in claim 54, wherein the power source is a power source for generating a DC voltage

70. (NEW) A charging apparatus as set forth in claim 55, wherein the power source is a power source for generating a DC voltage.

71. (NEW) A charge control circuit for controlling a charger for an electronic apparatus that applies an input voltage supplied from a power source to a load and has the charger for charging a battery by using the input voltage as an input, the charge control circuit comprising:

a control circuit for adjusting the charging power the charger supplies to the battery, based on an input voltage detected by a detector for detecting the input voltage from the power source.

72. (NEW) A charge control circuit for controlling a charger for an electronic apparatus that applies an input voltage supplied from a power source to a load and has the charger for charging a battery by using the input voltage as an input, the charge control circuit comprising:

a control circuit for adjusting the charging power the charger supplies to the battery, based on an input voltage detected by a detector for detecting the input voltage from the power source, wherein the power applied to the load changes depending on the state of the load.

- 73. (NEW) A charge control circuit for controlling a charger for an electronic apparatus that applies an input voltage supplied from a power source to a load and has the charger for charging a battery by using the input voltage as an input, the charge control circuit comprising:

a control circuit for controlling the charger to generate a maximum charging power while controlling an input voltage detected by a detector for detecting the input voltage from the power source not to be lowered to a minimum permissible input voltage or below.

74. (NEW) A charge control circuit as set forth in claim 71, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

75. (NEW) A charge control circuit as set forth in claim 72, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

76. (NEW) A charge control circuit as set forth in claim 73, wherein

the charger has a switch to be turned ON and OFF for supplying charging power to the battery, and the control circuit controls the charging power by controlling the switch.

77. (NEW) A charge control circuit as set forth in claim 71, wherein the control circuit controls the charging current so that a charging current detected by a charging current detector for detecting the charging current value of the battery becomes equal to or lower than a current value assigned to the battery.

78. (NEW) A charge control circuit as set forth in claim 72, wherein the control circuit controls the charging current so that a charging current detected by a charging current detector for detecting the charging current value of the battery becomes equal to or lower than a current value assigned to the battery.

79. (NEW) A charge control circuit as set forth in claim 73, wherein the control circuit controls the charging current so that a charging current detected by a charging current detector for detecting the charging current value of the battery becomes equal to or lower than a current value assigned to the battery.

80. (NEW) A charge control circuit as set forth in claim 71, wherein the control circuit controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery

becomes equal to or lower than a voltage value assigned to the battery.

81. (NEW) A charge control circuit as set forth in claim 72, wherein the control circuit controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes, equal to or lower than a voltage value assigned to the battery.

82. (NEW) A charge control circuit as set forth in claim 73, wherein the control circuit controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes equal to or lower than a voltage value assigned to the battery.

83. (NEW) A charge control circuit as set forth in claim 71, wherein the power source is an AC adapter.

84. (NEW) A charge control circuit as set forth in claim 72, wherein the power source is an AC adapter.

85. (NEW) A charge control circuit as set forth in claim 73, wherein the power source is an AC adapter.

86. (NEW) A charge control circuit as set forth in claim 71, wherein the power source is a power source for generating a DC voltage.

87. (NEW) A charge control circuit as set forth in claim 72, wherein the power source is a power source for generating a DC voltage.

88. (NEW) A charge control circuit as set forth in claim 73, wherein the power source is a power source for generating a DC voltage.

89. (NEW) An electronic apparatus capable of charging a battery by using power from a power source as an input while making a load operate by using the power supplied from the power source, the electronic apparatus comprising:  
a charger for supplying charging power to the battery by using the power from the power source as an input;  
a charging current detector for detecting a charging current to the battery; and  
a charge control circuit for controlling the charging power the charger supplies to the battery so that a sum of the changing power applied to the load and the power charged to the battery from the power source becomes a value assigned in advance, and for controlling the charging current based on the charging current detected by the charging current detector so that the charging current becomes a limit value assigned to the battery or lower, wherein the power applied to the load from the power source changes depending on the state of the load.

90. (NEW) An electronic apparatus as set forth in claim 89, further comprising:

a charging voltage detector for detecting a charging voltage of the battery, wherein the charge control circuit further controls the charging voltage so that the voltage detected by the charging voltage detector becomes a value assigned to the battery or lower.

91. (NEW) An electronic apparatus as set forth in claim 89, wherein the pre-assigned value is a maximum permissible supply power of the power source.

92. (NEW) An electronic apparatus as set forth in claim 89, wherein the charge control circuit controls the charging power the charger supplies to the battery, based on sensed information on the input from the power source, so that a sum of the power applied to the load and the power charged to the battery from the power source becomes the pre-assigned value.

93. (NEW) A charging apparatus for an electronic apparatus that is capable of charging a battery by using power supplied from a power source as an input while making a load operate by using the power from the power source, the charging apparatus comprising:

a charger for supplying charging power to the battery by using the power from the power source as an input; and

a charge control circuit for controlling the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery from the power source becomes a value assigned in advance, and for controlling the charging current, based on a charging current detected by a charging current detector for detecting the charging current to the battery, so that the charging current becomes a value assigned to the battery or lower, wherein the power applied to the load from the power source changes depending on the state of the load.

94. (NEW) A charging apparatus as set forth in claim 93, wherein

the charge control circuit further controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the voltage charged to the battery becomes a value assigned to the battery or lower.

95. (NEW) A charging apparatus as set forth in claim 93, wherein the pre-assigned value is a maximum permissible supply power of the power source.

96. (NEW) A charging apparatus as set forth in claim 93, wherein the charge control circuit controls the charging power the charger supplies to the battery, based on sensed information on the input from the power source, so that a sum of the power applied to the load and the power charged to the battery becomes the pre-assigned value.

97. (NEW) A charge control circuit for an electronic apparatus that makes a load operate by using power supplied from a power source and that has a charger for supplying charging power to a battery by using the power from the power source as an input, the charge control circuit comprising:

a control circuit for controlling the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery from the power source becomes a value assigned in advance, and for controlling the charging current based on a charging current detected by a charging current detector for detecting the charging current to the battery so that the charging current becomes a value assigned to the battery or lower, wherein the power applied to the load from the power source changes depending on the state of the load.

98. (NEW) A charge control circuit as set forth in claim 97, wherein the control circuit further controls the charging voltage so that a charging voltage detected by a charging voltage detector for detecting the voltage charged to the battery becomes a value assigned to the battery or lower.

99. (NEW) A charge control circuit as set forth in claim 97, wherein the pre-assigned value is a maximum permissible supply power of the power source.

100. (NEW) A charge control circuit as set forth in claim 97, wherein the control circuit controls the charging power the charger supplies to the battery, based on sensed information on the input from the power source, so that a sum of the power applied to the load and the power from the power source charged from the power source to the battery becomes the pre-assigned value.

101. (NEW) An electronic apparatus having an input section for inputting power from a power source and capable of charging a battery by using the power from the input section as an input while making a load operate by applying the power input from the input section to the load, the electronic apparatus comprising:

a power input sensor for sensing power-input information by sensing an input of power from the input section;

a charger for charging the battery by using the power from the input section as an input; and

a charge control circuit for controlling the charging power the charger supplies to the battery based on the power input information sensed by the power input sensor so that a sum of the power applied to the load and the power charged to the battery from the input section becomes a value assigned in advance, wherein the power applied to the load from the input section changes depending on the state of the load.

102. (NEW) An electronic apparatus as set forth in claim 101, further comprising:

a charging current detector for detecting a charging current of the battery, wherein the charge control circuit controls the charging current based on the detected charging current so that the charging current becomes a value assigned to the battery or lower.

103. (NEW) An electronic apparatus as set forth in claim 101, further comprising:

a charging voltage detector for detecting a charging voltage of the battery, wherein the charge control circuit controls the charging voltage so that the charging voltage detected by the charging voltage detector becomes a value assigned to the battery or lower.

104. (NEW) An electronic apparatus as set forth in claim 101, wherein the pre-assigned value is a maximum permissible supply power of the power source.

105. (NEW) A charging apparatus for an electronic apparatus that has an input section for inputting power from a power source and is capable of charging a battery by using the power from the input section as an input while making a load operate by applying the power input from the input section to the load, the charging apparatus comprising:

a charger for charging the battery by using the power from the input section as an input; and

a charge control circuit for controlling the charging power the charger supplies to the battery, based on power input information sensed by a power input sensor for sensing the power input information by sensing an input of power from the input section, so that a sum of the power applied to the load and the power charged to the battery from the input section becomes a value assigned in advance, wherein the power applied to the load from the input section changes depending on the state of the load.

106. (NEW) A charging apparatus as set forth in claim 105, wherein

the charge control circuit controls the charging current, based on a charging current detected by a charging current detector for detecting the charging current of the battery, so that the charging current becomes a value assigned to the battery or lower.

107. (NEW) A charging apparatus as set forth in claim 105, wherein

the charge control circuit further controls the charging voltage so that a voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes a value assigned to the battery or lower.

108. (NEW) A charging apparatus as set forth in claim 105, wherein the pre-assigned value is a maximum permissible supply power of the power source.

109. (NEW) A charge control circuit for an electronic apparatus that has an input section for inputting power from a power source and a charger for charging a battery by using the power from the input section as an input, for making a load operate by applying the power input from the input section to the load, the charge control circuit comprising:

a control circuit for controlling the charging power the charger supplies to the battery, based on power input information sensed by a power input sensor for sensing the power input information by sensing an input of power from the input section, so that a sum of the power applied to the load and the power charged to the battery from the input section becomes a value assigned in advance, wherein the power applied to the load from the input section changes depending on the state of the load.

110. (NEW) A charge control circuit as set forth in claim 109, wherein the control circuit controls the charging current based a charging current detected by a charging current detector for detecting the charging current of the battery so that the charging current becomes a value assigned to the battery or lower.

111. (NEW) A charge control circuit as set forth in claim 109, wherein the control circuit controls the charging voltage so that a voltage detected by a charging voltage detector for detecting the charging voltage of the battery becomes a value assigned to the battery or lower.

112. (NEW). A charge control circuit as set forth in claim 109, wherein the pre-assigned value is a maximum permissible supply power of the power source.



113. (NEW) An electronic apparatus having a charger for outputting a charging current to charge a battery by using power of a power source and supplying the power from the battery to a load to make the load operate, the electronic apparatus comprising:

a sense resistor provided between a connection point between the power source and the charger and the battery, for detecting a charging current flowing into the battery and for detecting a current flowing out from the battery ; and

a controller for controlling the charging current from the charger based on a current value measured by using the sense resistor.

114. (NEW) An electronic apparatus as set forth in claim 113, further comprising:

a current measuring section for discriminating which one of two input potentials applied to both ends of the sense resistor is larger, and for detecting both a charging current and a discharging current from a voltage generated according to a difference between the two input potentials.

115. (NEW) An electronic apparatus as set forth in claim 113, further comprising:

a remaining-amount determining section for determining a remaining amount of current charged to the battery based on a charging current value measured by the sense resistor.

116. (NEW) An electronic apparatus as set forth in claim 113, further comprising:

a remaining-amount determining section for determining a remaining amount of current charged to the battery based on a discharging current value measured by the sense resistor.

117. (NEW) An electronic apparatus having a charger for supplying a charging current to a battery by using power of a power source to make a load operate based on the power supplied from the battery, the electronic apparatus comprising:

a sense resistor disposed between the battery and a connection point between the power source and the charger, for detecting a charging current flowing into the battery in order to control the charging current of the charger; and

a detector for detecting a discharging current by the sense resistor when the power from the battery is supplied to the load.